RECORD

7530-222-3525
FEDERAL SUPPLY SERVICE
(GPO)

Heer Specimens

Collections

Greenland.

Capt. Inglefield - To Geol Survey in London (Br. Mus.)
Lt. Colomb - Dublin Museum
Sir Leopold Mac Clintock - Dublin Museum

Capt. Inglefield - Greenland (Atanekerdluk, Disco)
Obrik - Greenland (Disco) Franklin Is., King William Land Where?
Mac Clintock - Greenland (Atanekerdluk) To Dublin
Torell - Greenland To Stockholm
Dr. Tyall - Greenland East Disco To Berlin now Brit. Mus

Arctic American Archipelago

Mac Clintock Dublin Museum
Sir Robert McClure from Banksland To Dublin & London

North Canada

Dr. Richardson McKenzie at 65° N Br. Mus.

Iceland

Prof. Steenstrup Copenhagen
Prof. Hunfeldt Munich

Spitzbergen

Nordenskiöld & Blomstrand Stockholm Reichsmuseum

Hen 1661 Vol 1 North Auckland, Mitchell & Co
17 Bankstown, MacKenzie, Spalding

1871 } Vol 2 Bass & Co
1870 } - Marsden Lowe & Spalding

1874 Vol 3

Heer Flora fossilis Arctica Vol. 1 1868
North Greenland

Osmunda heeri Gaudin p 88 Pl. 1 f. 6-1
~~Torell~~ Atanekerdluk (Colomb)

Pecopteris torelli Pl. 1 f. 15
Atane. (Torrel)

*Sparganium stygium Hr. p. 97 Pl. 45 f. 7, 13d Atane. (Olrik) f 7. sterile Kop. f 13d. head?

Populus arctica Pl. 4 f. 6a 7

Populus richardsonii p. 98 Pl. 4 f 1-5 ; Pl. 6 f. 7, 8
Pl. 15 f. 1c
Atane. (Richardson) prob. others. most common pl. w. leg. & Pop. arct.

P. zaddachi p 98-99. Pl. 6 f 1-4, Pl. 15 f 1b
Atane. (St. Colomb. Dr. Lyall.)

P. gaudini Fischer? 99 Pl. 7 f. 1-4 Pl. 50 f. 9
Atane. (St. Colomb.)

P. sclerophylla 99 Pl. 7 f. 5
Atane (Torrell).

*Populus arctica 100 Pl. 4 f. 6a, 7 Pl. 7 f. 5, 6;
Pl. 8 f. 5, 6 Pl. 17 f. 5b, c.

Pl. 6 f. 6 Pl. 5 f. 9
Pl. 5 f. 1a, 2b, 3, 4, 7b Pl. 17, f. 5c
Pl. 5 f. 11, 13
Pl. 5 f 12
Pl. 17, f. 5b
Atane (Olrik, M'Clintock, Colomb, Lyall Torell.)

Heer v. 1, 1865 N Greenland

Salix groenlandica 101 Pl. 4, f. 8, 9, 10
Atane.
S. sanlana 102 Pl. 4, f. 11-13; Pl. 47 f. 11
Atane.
Myrica acuminata Ung. 102 Pl. 4 f. 14-16; Pl. 7 f. 6bc
Atane.
M. borealis 102 Pl. 47 f. 10
Atane. (Olrik)
Betula mietschingi 103 Pl. 12 f. 9; Pl. 45 f. 11c
Atane.
Alnus nostratum 103 Pl. 47 f. 12
Atane (Olrik).
Carpinus grandis Ung. 103 Pl. 49 f. 9
Atane. (Olrik)
Ostrya walkeri 103 Pl. 9 f. 9-12
Atane. (Dublin)
* Corylus Mac Quarrii 104 Pl. 8 f. 9-12; Pl. 9, f. 1-8
Pl. 17 fig. 5d Pl. 19 f. 7c.
Atane (Olrik., Mc Clintock, Colomb)
Fagus decaliones Ung. 105 Pl. 8 (1-4); 10 (6); 46 (4)
Atane. (Colomb, Olrik)
✓ Fagus castaneafolia Ung. 106 Pl. 10 (8); 46 (1, 2, 3)
Atane
Fagus dentata Ung? 106 Pl 10 f. 1, 2, 7, 9b
Atane. (Dublin Copenhagen)
Fagus macrophylla Ung.? 107 Pl. 46 (11)
Atane. (Olrik)
Quercus drymeia Ung. 107 Pl. 11 (1-3).
Atane (Dublin, Stockholm)

Quercus furcinervis Rosm. 107 Pl. ~~45~~ 7 (6a, 7a)
Pl. 45 (1d); Pl. 46 (6).
Atane. (Olrik, Torell).

*Q. lyellii Hr. 108 Pl. 47 (9)
Atane. (Olrik)
*Q. groenlandica 108 Pl. 8 (8); 10 (3, 4); 11 (4); 47 (1).
Atane, Disco (Dublin, Copenhagen)
Q. olafseni 109 Pl. 10 (5); 11 (7-11); 46 (10).
Atane (Dublin, Copenhagen).
Q. platania 109 Pl. 11 f. 6; 46 (7)
Atane. (Stockholm, Copenhagen).
Q. steenstrupiana 109 Pl. 11 (f. 5); 46 (8, 9). Atane Dublin Copen
Q. ? atava 110 Pl. 9 (13 a, b.)
Atane (Dublin & Copenhagen).

Planera ungeri Ett. 110 Pl. 2 f. 8b
Atane (Dublin & Copenhagen).

Ficus ? groenlandica 111 Pl. 13 f. 1-5; Pl. 49 (5)
Atane (Olrik, M'Clintock, Colomb).

Platanus aceroides Gopp. 111 Pl. 12 (1-8); 47 (3).
Atane (M'Clintock, Torell, Olrik)

Daphnogene kanii 112 Pl. 14; 16 (1)
Atane (M'Clintock, Inglefield & Olrik)

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Atane

Mar Clintochea types for genus

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Atane (Common) (Dublin, Copenhagen
M. trinervis 115 Pl. 15 (7, 8, 9)
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Atane
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Atane. (Forell)

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Atane (Stockholm, Copenhagen)

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72. Galium antiquum 119 Pl. 17(8)
Atane (Dublin)
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Atane (Dublin, Copenhagen)
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Atane (Olrik)
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Pl. 48(1-3)
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(Atane) ~~Br. Mus~~ (Richardson)
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Atane
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Atane (Dublin)

91. J. strozziana Gaud. 125 Pl. 49 (3-6)
Atane (Olrik)

92. Crataegus antigua 125 Pl. 51 (1, 2)
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93 C. warthana 126 Pl. 50 (3, 4)
Atane (4) Disco (3) (Olrik)

94. Prunus scottii 126 Pl. 8(7)
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95. Celtis salteri 126 Pl. 40 (8 c)
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Utane

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Utane.

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103. C. sphaerula 128 Pl. 16 (10) 10b)
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30. Tilia ovalis proaccinii 151 Pl. 26 (7b); 27 (5-8)
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for Riksmuseet Stockholm, all done.

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The miocene flora & fauna of Spitzbergen
Swedish expedition. in Stockholm

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Edward Whymper Coll. North Greenland

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			53(5)
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61.	Pterospermites spectabalis	480	43(15b); 53(1-4)
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63.	Ilex longifolia	"	50(17); 56(1)
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65.	Euonymus amicus	"	56(10);
66.	Zizyphus hyperboreus	482	50(20)
67	Paliurus colombi	"	50(18, 19)
68	Rhamnus eridani	———	

69.	Rhus bella	482	Bl 56 (3-5)
70.	R. arctica	"	40 (5e.)
71.	Juglans acuminata	483	54 (5,6); 55 (1)
72.	J. denticulata	"	56 (6-9)
73.	Sorbus grandifolia	"	54 (4)
74.	P. scottii	"	55 (5a, b, c)
75	Leguminosites sp.	"	39 (3b)

May 30, 1974.

Mineralogical Museum Copenhagen

Organization of exhibits into

Spacious st hall including meteorites
very old fashioned cabinet display
Minerals
Greenland

Svend Funder
Finis

Mineralogical-Geological Mus. Copenhagen Drawers seen 132- 136
133 137
134(138 pars
135

Heer Collection

1868 Erster Theil #2 Die flora der Atanekschichten
Miocene of Iceland probably is Miocene!
Write to Friedrich

~~MGM~~ Pinus steenstrupiana 24 (23)
MGM 6734
Large smooth margined scale of cones (?)
6742 P. steenstrupiana 24(31)
6735 " " 24(24)
margins broadly crenate. not close to Glyptostrobus

6731 Pinus thulensis Heer. 24 (21)
af. with long sunder of ~~pap.~~ inside margin not nearly reaching the ex. Does not ds. P. pergrinea
6727 P. thulensis Heer. 24(17)
Prop. Af. central! not P thulensis fig. 21.
6732 P. martensii Heer. 24 (22a-b)
Large sunded nutlet.

6733 Betula prisca Heer. 24(22c)
Ament scale trifurcate central lobe longer than lats.

6774 Salix macrophylla Hr. 25(3)
Hredravatni Island.
P innate app. lucanpto lf. w strong lanceers 3° distally. Margin very poorly preserved prob not present but there are extensions of the 2° into what appear to be bristles. These bristles may simply be vein extensions remaining after decay of foliar marginal tissue

6761. Betula ~~tes~~ macrophylla 25(16)

Casp. teeth in 2 sets appar non-gl. H. edaratri of Isl.
Cannot tell is have converging h.o. arches as in ~~other~~
Betula. or Betulaceae.

6756 B. " 25(11)

H. edaratri of Isl.
3 orders of teeth - Casp Tooth are obtuse & rounded
& app non-glandular not poss to see h.o. tooth slr.

6764. 25(19)

H. Iceland of Iceland.
Margin w/ rounded by 2° of teeth lower 2° recurved, bo. asym.
poor spec for slir det.

6763 25(18)

H. of Iceland.
Teeth good for detail non-gl. w obt. at converging arches
Good for Betula

6762 25(~~17~~17)

H. of Iceland.
Poor scn. detail good for macro det. for Betula but no
concl. poss.

6779 Corylus mac quarrii 26(2)

H., of Iceland.
Sp. ~~teeth~~ margin but 3° scn. at st 2's as said in
my mmo. Some margin at base teeth point forward
non-gl.

6780 26(3)

H. of Iceland.
Poor spec. broad teeth near of. ~~of~~

6777 Betula pnoca 26 (1b-c)
Brymslakk, Iceland.
Pinnate, serr. of pos ver.
6776 Corylus macquarrii 26 (1a)
3°s mostly ⊥ B. Ice
6778 Vitis islandica B. Iceland 26 (1d, e, b)
Shape that of Ices not Vitis. Cannot see tooth ver

6773 B fischameri 25 (29)
H. Iceland
3 lobed fruit 25 (30)
6774 do above.

1283 Min Mus. K7.

a Tandersdlute, Greenland.

Kup. 6864 Sparganium stygium Heer. Pl. 45 (2a, b)
Sterile specimen only no ~~sugg~~ ident. features.
Probably a monocot frag.

6866 Cyperacites borealis Heer. Pl. 45(3)
Sterile spec. with 2 orders of long. ll veins interspersed 1:1 + short curving transverse cross-veins between 1°s. A monocot could be any number of things even a palm

6867 } Cyperacites microcarpus Heer. Pl. 45(5)
6868 } impressions of very zygoid strs.

6892 Fagus castaneaefolia Unger Pl 46 (1)
Pennate ent may. lf. bordered veined lf.
3°s transverse w 4°s + 5°s roughly random within 3° spaces
no trace of h.o. vl. Prob. not a Fagus.

6893 Pl. 42 (2)
A grange lf. 3°s ~~fra~~ strongly perc. + closely spaced
no portion of margin preserved. ~~Ha~~ H.O. vein obsolete.
Other. same as 6892

6894. Pl. 46 (3a)
Pennate, crap leaf, w A-1 teeth angular serrates.
2° vein endings may ~~ex~~ extend beyond leaf margin in a bristle but cannot be sure. Cleaning needed. 3°s strongly perc. but cannot see h.o vein.

6896 Fagus deucalonis Heer. Pl. 46(4)
Similar to "Viburnum" cupanoides similar texture & 3° & h.o. vein course. However 2°s umbrosanted. Tooth shape same & tooth ven. same as Vib. cup.

6898 Quercus funcinervis Rossm. Pl. 46(6)
Pennate app. coriaceous leaf w. strongly perc. 3°s 3°s forming - concentric arcs within leaf.

etc.

Poss. a Cinnamomum fragment.

6899 Quercus platanoid Heer Pl. 46(7)
A "platanoid" prob. Platanus neuldeii thus upper fragment of a prob. actino leaf w. crasp 1° & 2° veins & typical Platanoid pattern of perc. 3°s w. sub parallel stacked 4° veins & a h.o. vein ~~reticular~~ orthogonal reticulum.

6900 Q. stenotropiana Pl. 46(8)
Penn. crasp. A-1 tooth margin somewhat rolled downward sinuses w/a higher order vein running to tooth - rounded 3°s perc. - h.o. vein forming a very strong deeply imp. ulter. w. some reticulation to it.

6901. Pl. 46(9)
poor fragment ven. pattern similar poss. identical w/ (6900)

6902 Quercus olafseni Heer. Pl. 46 (10)

Bs. asymm as in 6900 - Poor spec. penn. crasp. 2°s to branches 3°s perc. - h. o vein. cannot be determined - Also rel. to Fag. lucalonis & thus to V. ib. Cupanoides

6903 Fagus macrophylla Heer Pl. 46 (11a)

a bad fragment.

6904. Diospyros brachysepala Heer Pl. 46 (11a)

a scrap of nothing.

6905 Quercus gionlandica Heer. Pl. 47 (1)

Frag. of penn. crasp lf. w Al teeth

ing. sinuses 3°s strongly perc. h. o vein cannot be det. a relatively poor spec for h.o. Related.

6906 Fraxinus denticulata Heer O. Pl. 47 (2)

ent. margined except on upper left side, penn., 2°s mostly co basilic bec. crasp where teeth lay above. 3°s distantly perc. Poss. related to whole Quercus complex

6907 Platanus aceriides Goep. Pl. 47 (3a)

Pelm. lf. w actino vein 2°s crasp into very closely sp. nm. gl teeth 3°s perc. Does appear to have stitched subparallel 4° veins, h.o. vein obsolete however and large number of closely spaced teeth are not typical of the Platanus

6908 Sequoia langsdorfii Heer. Pl. 47 (3b)

this was ref. by Chaney into Meta. occidentales but ~~me~~ can not confirmed.

needles are club shaped, with blunt apices, & are twisted into one plane apparently, but ~~not~~ ~~recur~~ do not appear to be opposite or decussately opposite.

6910 Diospyros brachysepala Pl. 47 (4 b, c, e)
poor repp. fertile spec. as a mould of what?

~~6896 Fagus deucalionis Unger Pl. 46 (4)~~
~~note in tray "not Fagus"~~
~~as in F. deucalionis~~

6911 Diospyros brachysepala Pl 47 (5f.)
Fragment of a 12 parted fruit.

6912 Pl. 47 (5g)
similar to 47 (5f.)

6913 Pl. 47 (7)
receptacular end of a fruit? a bleh specimen.

6914 Diospyros brenii Hr. Pl. 47 (8)
Obts ~~Ataxehrdsbl~~
Pinnate, brachydromous (1 series), 3° transverse, h.o. ven. into a random reticulum.

6915 Quercus lyellii Pl. 47 (9)
Fragment of an apparently shallowly toothed pinnate lf, pinnate, Cuesp.? distantly & weakly perc 3°s. Obsolete h.o. ven.

6916 Myrica borealis Hr.
Fragment of shallowly toothed semi-Cuesp leaf w a random 3° & h.o. vein reticulum. Not Myrica (semicuesp) but no telling what it really is

6917 Salix racana Pl. 47(11)
Indet frag. small ent, pinn incompl of ro/
obsolete h. & ven.

6918 Alnus rostratum Pl. 47(12b)
really an indet scrap of a pinnul of ro
perc. 3° v and sub parallel 4° v. This resembles
"platanoid" pattern but ves of interstitiary vens
though close does not form reticulum of platanus.
Poss. plat. but prob. indet.

6918 Pl. 47(12a)
Pinn. crasp, mod perc 3° v mod perc. sub // 4° veins
teeth straight-concave. Teeth nowhere well enough
preserved to det gl. or vein morph

6919 Mac Clintockia lyalli Pl 47(13)
Ent. parallelodromous f. ro sub parallel to
random inter 2° veins. I wonder if this is
really an ngio or perhaps not a Dipteridaceous
fern (Hausmannia?) or a gymnosp.? Good
cellular impressions SEM perhaps?

6920 Salisburea adantoides Pl. 47(14)
Leaves and resin ducts between 1° v as in
Ginkgo. Ginkgo adantoides. Rubber cast only
in Col.

6924. Vitis arctica Pl. 48(2a, b, c)
a small convex-convex teeth, pinnate, crasp.,
perc tertiaries 4° orthog h.o ven random
not a vitis do not know what perhaps indet
contorted other materials

6925 Ilex longifolia Pl. 48 (7)

Pennate brochido lf, broch in at least 2 series w/ i.c. veins, some transverse 2°s 1.c. vln. mainly random. M margin w. small denticules. Otherwise shape and vln like that of Persea arguta.

6928 Pl. 48(6)

A poorer more fragmentary spec.

6929 Ilex vitiulata Pl. 48(7)

An pennate, entire marg., incompto lf.; 2°s congested ~~poor~~ toward base; 1.c. vln a random viticulum areolation small.

6930 M' Clintockia lyalli Pl. 48(8)

as before.

6927 Ilex longifolia Pl. 48(5)

Indet scap. pennate, serrate lf. apparently incompto serrae concave-convex, teeth w/ no trace of gland (obsete), no term of vln. vln above 2° obsolete. Upper indet frag.

6931 Xodoxanites arctica Pl. 48(9)

A fern, interesting thing is that its ~~vln~~ ~~pattern~~ surface cellular pattern is impressed in the investing matrix of these sp.

6932 Rhamnus brevifolius Pl. 49(1)

Small, indet, entire, brochido scrap w/ opp. random 1.c. vln.

6933 Zizyphus hyperboreus Pl. 49(2)

Small, acrodromous, indet, entire marginal scrap.

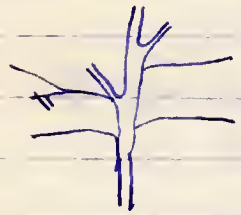
6936 Juglans sloggeriae Pl. 49(4)

Indet ent, pennate, incompto frag.

6937 Juglans stozziana Pl. 49(5)
Another pinnate basal frag. one 2° branch. in greater detail 3°s random into 1.c. areas h.o. ven. random.

6939. Juglans acuminata Pl. 49(7)
Pinnate, entire, ← acumpto (?) leaf. Apparently random h.o. ven. Certainly not a Juglans.

6940 Ficus ? grönlandica Pl 49(8)
A pinnate ~~or~~ ~~pac~~. lf. with lower 2°s poss. reduced from 1°s upp. margin not preserved so cannot tell if this is a palm. lf. (prob. not). Tests thin & pers. w a stitched inter 3° vein 4° & 5° in ~~pacu~~ orth. h.o. ven obsolete (thus cannot tell if reticulate).



a lower pair 1 2°s attached to 1° w a thickening characteristic of the plats. base of 1° vein deeply sunken in leaf tissue also as in plats. Lf b. shallowly cordate.

6941. Carpinus grandis Pl. 49(9)
shallowly sinuated ser marg. sinus. Carp 3°s pen. a mbr. of Q. grönlandica complex.

6942 Rhamnus eidlani Pl. 49(10)
A Entire lf., obt. at, decurrent bs, ven pinnate lacampto 3°s perc., h.o. ven. possibly be able to be discerned with oblique lt. & and a lot of cont.

6944. Crataegus antiqua Pl. 50(2)
Pinnate lf. w conly, conv. serrat non-gl. ven pinnate casp, lower 2°. w outer branches

3°s dec, 4°s ~~the~~ some tendency to be orthogonal but mainly random. Not a Crataegus prob in Vib antiquum cra varaint or Cf. or in Hamamelidales.

6943 Pl 50(1)

Similar in all respects more fragmentary than preced.

6945 Crataegus warthana Pl. 50(3)

Pnr. in very coarse matrix only 1 & larger 2°s Palmatly lobed. prob actino Cf. Could be a small Platanus reynoldsii.

6949 Tsummoscites arctiaus Pl. 50(5)

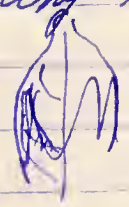
Fondet.

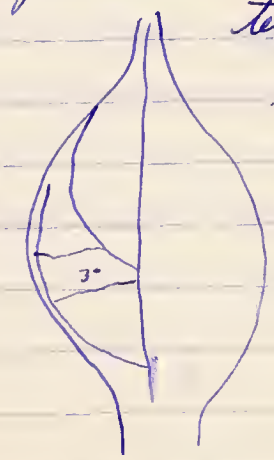
6950 Rhamnus gaudini Pl. 50(6)

Fragment of pinnately vend Cf. w closely spaced 3°s, 4° orthogonal 5 & h.o. random ul.

6951 Rhyllites eraniacens Pl. 50(7)

Ent many ~~pos~~, acumin ot, & pinnate 2°s ~~strongly~~ eucampto to point of being nearly acro. ~~other intervening~~ ~~one primary stem~~ terts lonly transverse h.o vein opp random.





A. weidleaf.

6954 Acer otopteris Pl. 50 (10)

A palmactino platanoid w typically thickened "pad like" 1° supravaral nerve junction.

6956 Andromeda denticulata 50 (11d, e)

Ent, penn, ell, ac ap & ba, penn. brachido, h.o. ven. obsolete.

Finished all angio in Heer 1868 in M & M Coper. w drawer 138 pars.

Heer 1883 called (127) begins w/ drawer 101 and runs to 131. This coll is also from Massachusetts Board.

Also looked at Furcula in MGM in dr. 13
paper 130

MGM 7043 Furcula granulifer

Harris, T. : Fossil Flora of Scoresby Sound. Medd. o. Grönl. Bd 85, 3

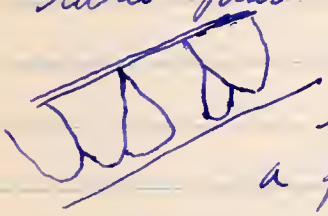
Text. fig 1a (Holotype) acc. to Andrews Cat.

A. bilobate lf frag. w. penn ven of the lobe (total prob actino). 2°s (in lobe are ~~s~~ spaced abt. 4-5 mm apart run sh toward margin and near it are rigidly & uniformly bracketo.

No. trace of l.o. ven. on fresh examination.

Marg. ent.

~~in rare cases the~~ etc. Brachydromy appears to take place as result of dichotomy of 2° veins near margin. These are not upward directed as in angio. In rare cases the dichotomy takes place near mid vein



in fact toward ~~the~~ lf. ap the 2° ven becomes a great deal less regular.

This is not an angio but a fern type of ven. Each i.c. area of leaf depressed below ~~ven surf~~ veins almost looks imbricate.

Matrix of specim a f.g. ~~as~~ carb. is too coarse to preserve fine details

Shape E (FAK) Drawer 6

Riksmuseet - Stockholm

All from Belsund Spitzbergen 1858 Dr. 6

Populus richardsoni Heer. F. F. A. 1, 31 (1a, ~~b~~)

Belsund Spitzbergen

Actino to flabellate lf. w rounded marg teeth

Perc. 3°s shown in fig ~~on~~ on prox part of lf bel.

~~1~~ 1°s are not there. Matrix a med. gr. carb-

se w little detail preserved. Cannot det if teeth gl or not.

Appears to have an apical mucro spec. pack. indet.

Corylus macquarrii same pice as above.

An ~~also~~ indet scap.

Populus richardsonii H. FFA. 1, 31 (2)

As illust.

for Pop richardsonii cannot det if marg teeth of either of these ~~as~~ are glandular although sp appears to have an ap. mucro. Mucro & non gl. teeth would make these sp cf. Cocculus flabella rather than to Dicot richardsonii w gl. teeth and mucro ?.

Ulmus heufersteini FFA. 1, Pl. 30 (5a)

~~Pinn~~ Frag of pinn serrate marg. lf (only 1 tooth preserved. Fig almost unrecognizable as type

2°s perc. frag. forked b.o. str. obsolete

Forth str. - str. ruled not sin detail unknown.

More teeth at base of lf. l. 2° w outer branches.

teeth w/ not detail preserved.

Potamogeton nordenskioldii FFA I, Pl. 30 (5b, c, d)
Coarse matrix (X med gr. ss)
3° veins illust in potamog. ~~[illegible]~~
~~detum~~ are difficult to see w/ 16X scope
appear present under oblique light.

Corylus macquarrii I Pl. 31 (5, 6a)
An inlet frag. lacking margin of a pinnate
~~H~~ lf. w/ closely perc. 3°s.
in m. g. ss.
On opposite side in fig 6a
2 lf. is inlet scap. w/ no features
in a med ss.

Tilia malinguini Hr. I Pl 31 (6b, c)
a total fabrication based on a few tiny
impressions.

Alnus kefersteinii Hopp I, Pl. 31 (4a)
inlet frag. of pinn. comp toothed lf. lower 2° w/
outer brs.

Salix macrophylla Heer. I, Pl. 31 (3a)
inlet scap.
Fagus decalonis Ung. I, Pl 31 (3b)
Pinnate lf. many not preserved only 7 & 2°.
inlet.

Filicites deperditus Heer. I Pl. 29 (7)
Indet stem frags.

X

From Kong's Bay, Spitzbergen.
Skåp E Facies
From Miocene Fl. & Fauna of Spitzbergen Vol. II Sect. 2.

Carex ultima Heer. II(3) Pl. 8 (4b)
Hopwash! Indet.
Salix lutifolia Heer. II(3) Pl. 8 (4a)
Same spec. No indent char.

Sagittaria ? hyperborea Heer. II(3) Pl. 8 (14)
Similar to illust but center not depressed.
Indet.

~~Fitte~~ Tilia malmgreni I Pl 33 (1)
Indet frag. in med gr. ss.
a large ff not margin dm pinnat lower 2° & distal portions of mes above w/ outer branches, 3° is strongly & curvingly parc. L/med L acute & sh as illust but admed L is obtuse & not as illustrated (acute)!
Indet.

Populus richardsonii II(3) Pl. 10 (12)
detno or flabellate fragment but absolutely indet.

From Gun Harbor, Spitzbergen
Ships E Jade 17.
Matrix much finer than preceding lvs. better preserved.

Blutaparon aciculare Göpp. I Pl. 32 (1, 2)
Small frag. ~~Probably~~ acting ? probably lobate w/ strong 2° veins prox. 3° veins which ~~double~~ freq. ~~branch~~ forked and barely decurrable ~~w/~~ w/ 4° veins ~~intermediate between~~ between the 3°s.

Not from Hue Collections is a beautiful spec. of labeled Betula macrophylla (Göpp.) Heer from Gun Harbor Coll. H. L. Nobeg 1912
L. Penn ~~w/ l~~ Crasp w/ l. 2°s having outer brs. 3°s prox. at ab. 70 d. acute both sides teeth, non gl. with marginal ultimate teeth of Corylus. 2° veins at higher 2 approaching the base.

Miocene Flora & Fauna of Spitzbergen
Heer Vol. II (3) 1871
~~Cap Staratchin, Spitzbergen~~

Beiträge zur fossilen flora Spitzbergens
Heer ~~Vol~~ Vol. IV (1) 1876 Pls. 1-32.

Cap Staratchin, Spitzbergen

Populus richardsonii Heer IV (1) Pl. 32 (1)

Upper 1/3 of prot. retina lf w. irreg 2° veins b.o. obsolete 2° v. ending in or very close to ⊥ of teeth. Matrix a mud so too coarse to determine if the teeth are gl. or of ~~mucro~~ not present. Cannot det if this is really Dicot. reticulation (Heer) Hoffe or Cocc. Flabella Hoffe.
Dicot coarse teeth glandular
Cocculus " " non gl w of mucro.

Other material in tray = to Pop. richardsonii not possible to tell if Dicot v. or Cocc. flat but certainly not Cercidi.
Simply poorly preserved material

P. richardsonii Heer IV(1), Pl. 32 (2)

~~Low~~ 2 teeth from lowest st hand side upper lf ~~may have~~ has what app to be a thread of. This might be remains of a hydathodal of. & thus be

glandular but not enough mat. observed to det if P. richardi is truly gl. Teeth on ~~lf~~ lower side too poorly preserved to give ~~exact~~ ~~indication~~ Criterion of glandularity.

Quercus grönlandica Heer. II(3) Pl. 12 (4)
Frag of upper part of pennate lf. w gently curving ns b.s. rim w margin preserved. Indet.

Q. grönlandica Heer. II(3) Pl. 2 (2)
Total indet.

Q. grönlandica Heer II(3) Pl. 2 (1)
A very indistinct fragmentary imp. of a ~~lf~~ pinn. Crap, ~~but~~ rounded serrate lf. No identifiable.

Corylus macquarrii II(3) Pl. 11 (11, 12, 13)
Fruit impressions rather poor.?

Viburnum whyneii II(3) Pl. 13 (
In a coarse shale good matrix.
Marginal fragment with bristle teeth. Vein ending somewhat expanded app secondary. Not Viburnum nor a Hamamelid. 3° vein basally pers 4° basally nhoyonds. becoming random 5° higher in lf.

Platanus accordes Heer. ~~III~~ II(3) Pl. 11(2)
Indet drawing shows imagination.

Quercus platanoides Hen. II(3) Pl. 12 (6a)
An inlet scaps without nearly the mag. detail shown in fig. ~~7x~~ 3°x appear very indist in med sand of rocks as pressure & close together. A useless inlet scaps.

Populus arctica Hen. II(3) Pl. 12 (6 c)
A very indistinct scaps wout detail.

Quercus platanoides Hen II(3) Pl. 12(5)
Frag of a scale, perh Caps of w/ distant pers 3°x
Most of many as fig is not than few teeth present but cannot really be sure if these aren't artifacts if not then if hairs torted.

Salsola arctica Hen. II(3) Pl 12 (10)
Poor imp of poss Sparganium poss Potamogeton poss many other things.

Q. platanoides Hen II(3) Pl. 12(7)
Inlet scaps ~~also~~ virtually no dist. features remaining.

Viburnum whymperi Hen. II(3) Pl. 13 (6)
A branch w one good node & bud on R.H. hand side one on left not present simply an offset in the twig which could be a bud scar or not.

Viburnum whympei Hee. II (3) Pl 13 (4)
frag of left margin.
Crenated. ser. A-1 or str-str. teeth, 3°s distantly but strongly nerv-frag. alternate + forking ~~th. o~~ 4° orthogonal, h.o. rtn. random, areoles large, leaf surface blisters at 18X. Certainly the same entity as Pl 13 f. 3. + 5. Teeth crenated

V. whympei Hee. II (3) Pl. 13 (5)
Similar teeth hooks like, poss hydathodal at term

V. whympei Hee. II (3) Pl 13 (17)
Seed imp. indet.

Andromeda protogaea Ung. II (3) Pl 13 (1)
Basal basal fragment of a leaf w disorganized ser.
Poss. caused by comminution of pl. tissue.

Nymphaea arctica Hee II (3) Pl 14 (1)
~~Indet stem remains in fg as. nothing more as distinctly marked lof bracts as figured would have on believe.~~
Spec in tray not one which was figured.
No rhizome or apis remains at all.

N. arctica Hee II (3) Pl 14 (6)
Could not find fruit figured on this specimen.

Nypsulum lanceolatum Heer II(3) Pl. 15(21, 22)
syn. Cercidiphyllum arctum (Heer) Brown
in Schloemer-Jäger: Paläontogr. 104 B, p 68.
Cp. Brown Jour. Paleont. 13(5) 495.

Really is a small elongate Arcidi fruit w ~~dist~~ f. 21.
virtually directed stigmatic crest
– stig on a elongate stigma on dorsal side.

f. 22. similar
in the Carb clay of Cape Staratchin in which
~~some for~~ a minority of spec. occur

Hedera maccluri Heer II(3) Pl. 13(31)

An ent. many basal actino frag. belonging to
Populus richardsonii Comptf whatever that is.

Stripped seeds.

~~Sparganium Crassum~~
~~Nordenskiöldia brevis~~ Heer II(3) Pl. 7 (3 ~~a, b~~ c)
Amazing! The figure ~~does~~ doesn't bear ~~the~~ any but
the most casual resemblance to the orig. specimen.
Possible dehisced fruit att. to an axis just below c
is certainly not attached to main axis as shown
A horrible piece of fakery!

Nordenskiöldia borealis Heer. II(3) Pl. 7 (3a, b)
Horribly poor bits of debased fruits?
P 7(7)
Possible nypsa fruits?
Pl. 7(1)
virtually inlet Carb trash.
Pl 7(5a)
a debased fruit
Pl 7(4)
' do.
Pl. 7(2b-e)
actually somewhat similar to fig.

Nypsudum fariforme Heer Pl. 15(24)
Neither of the two somewhat fragmentary fruit impressions found in the tray under this entry resembles particularly either the figure in Heer or Cercidiphyllum arcticum fruits.
syn. Cercidiphyllum arcticum (Heer) Brown
Schlemm-Jäger: Paläontogr. 104B p 68 1958
Cp Brown: Jour Paleont. 13(5) p 494, 1939.

Nymphaea arctica Heer. II(3) Pl. 14(3)
Axis without characteristic scars as shown in fig
" " "
Pl. 14(4)
Simple plant trash + axes no ~~the~~ scars.
Inlet.

Coscites all worthless impression sealtical.

Nordenskioldia borealis Heer. II(3) Pl. 7(8)
Nice imp of the ov or base of a 10 parted fruit
nightly as shown in fig.

Impt. refs. from Hans Inglan

Vitaceae Monograph.

Lavie, P., 1970, Contribution a l'etude carpoxylematique des vitacees Fasc. I Text Fasc. II Illustr. These Univ. de Montpellier. CNRS # A.O. 4618

Inglan, H., ~~Ha~~ 1963, Asiatic dicotyledonous offinities in the Cainozoic ~~of~~ flora of Europe. Kungl. Svenska Vetenskapsakademiens Handlingar, Bd 9, ~~Ha~~ # 3.

Oswald Heer Flora Fossilis Arctica Types at Brit Mus
Examined June 17, 1974

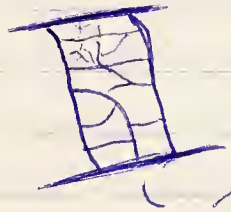
V 11381 in Vol II (1871)
Juglans denticulata Phil Trans 1869, p. 483, Pl. 56 (9)
Prag of pinn veined lf w/ acute, cuneate base.
2°s branches to sinus not into small rounded mag teeth. 3°s loosely & irreg & loosely perc. t.o. ven.
4° orthogonal then it & t.o. become random.
Ven. of this leaf is not quite that of Juglans although 2°s to sinuses put it in right subclass. Neither teeth nor venation are particularly like those of Juglans

V 11378 J. denticulata VII (1871), p. 483, Pl. 56 (7)
Shrimpton Coll.
Frdl poorly preserved comminuted fragment lacking details of mag. teeth or t.o. ven shown. A possible compd leaf although allachment not certain.
~~V 11380 V Pl 56 (6)~~
one left middle 2° of main lft looks like it bifurcate midway to margin

V 11380 J. denticulata Pl. 56 (6)
Lf (1) semi-comp one br. to sinus other to superadj. 2° 3°s loosely perc. Small rounded mag teeth. 2°s have been "reinforced" w/ pencil.

V 11379 J. denticulata Pl. 56 (8)
a very good spec for all ven. Clearly has cuneiform teeth

Pinnate may appear int but may be scaled under 2°s appear Comp 3°s ~~Closely~~.
opposite pre seldom forking freq ev / a 4° vein
⊥ to them for short dist 4° thus orthogonal
3° h.o 6° random.



areoles very med in size
no f.l.v. observed as well
no glands or vein dots.
a good leaf which bears careful study for poss
rel. to Juglandaceae quite possible 3°v

X V 11382 J. ~~denticulata~~ accuminata II (1871), p 483 Pl. 55 (1)
Pinnate, ell, lf. ev ecb bo. & cf
smallest lf no h.o. vein detail preserved, From shape
prob ident to J. denticulata.

X V 11312 Cupulus richardsonii II (1871), p. 465 Pl. 44 (9)
The very basal portion of a flabellately veined leaf
Could well be P. richardsonii but no Comp. veining
that is so.

X V 11310 P. richardsonii II (1871), Pl. 44 (7)
Basal frag. of an actino lf. with all pre. 3°s
h.o. vein. ~~very~~ ~~lf~~ obsolete no dist features
From Config of 1° & ~~2°~~ 3° veins Could be Cercidiphyllum
genetrix.

λ seen again in 1977

3v'

V 11311 P. richardsonii II (1871) Pl. 44(8)
Again specimens have but their 1° to 3° ven "enhanced" by pencil. Margin as well. Large many teeth w 2°s running directly into them. Does appear to be some expansion of the vein at the tooth axil but cannot be absolutely certain if glandular. Except for size of teeth teeth and their possible glandularity this sp closely resembles ~~Dioc~~ Dicotylophyllum mercerensis. 2° ven similar to those of Cercid arch. but H O ven obscure

×V 11313 P. richardsonii II (1871), p 465 Pl. 55(3)
Very large specimen, again cannot be sure if teeth are really glandular. In this case no evidence of gl. remains if it was present. Very similar in ter. ven. to Cercidiphyllum genetrix.

same specimen
Quercus platanoides
Pinnate lf rounded teeth, 2°s to tooth axil rounded sinuses, distant strongly pro. tert. Prob. a variant of Trap. decurrens - Viburnum Ceyanoides Complex.

V 11317 Populus arctica II (1871), p. 468, Pl. 53(4)
Lf deltoid ovate, acuto-, opp ent. margined lf is mud so showing fea if any of the separate elem. fuse

V 11317 Pterospermites spectabilis
Tiny of a large pinn lf w per 3°s not a Pterospermites (base is pinnate not

peltate, Coll of Viburnum cyanoides

V 11315 Populus zaddachi Hier II (1871) p. 466, Pl. 43(6)
Ed, rounded, gl. crenulate lf. Ven action at
3 1°s from base marginal vein 2°s term in tooth
in an expanded gl str which forms a recessed
cup or pit on tooth ad. Convergence of h. order laters
in tooth cannot be seen. L.C ven. is that of
cercidiphyllum. This spec. is def a Cercidiphyllum
genetrix.

est pub 1869

V 11321 Alnus nostratum Hier II (1871) p. 469 des. but not illust.
Ovate, serrate lf w Cord. bs. 2°s crosp lower pair
w outer branches, spacing of 2°s is = from bs to ap.
3°s strongly opp perc. An immature lf and a
rather poor specimen. This is Corylus macquarii Hier. Alnus
does not have a cordate base or a decrease in secondary interval toward base.

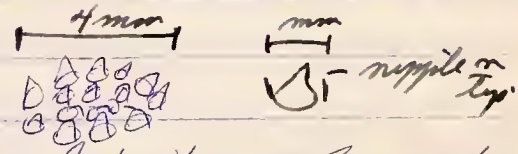
V 11319 Salix varians Hier II (1871) p 469, Pl. 43 (12)
Under medial frag of a pennate lf w 2°s sl. sinuous
or forking close to mid-vein, 2° interval app decreasing
toward base, 3° ~ loosely perc. ~~bad~~, h.o. vein random.
On same specimen is a rather good fruit of
~~Carpolithe~~ Carpolithes arctica

V 13847 fruit ident as that of Acer opterix not illust
Coll. s. shores of Disco Island. by Ed Heer, 9/1872
Massive wing not papery very thick seed. at least
30 cm long. Superficial shape a bit like Acer but
not likely. Sapindaceae rather than Aceraceae should be ✓

Mystery str. from Smith Mine. = C. potentilloides

× V11318 Salix racana II (1871) p. 469 Pl. 43 (11)
Ent ell, sinu rounded incompte lf. No identif. features
not even above 2°s preserved on absolutely rotten specimen

× V Carpolithes potentilloides - a small fruit w 16
tub shaped protuberances in it 10 in an outer
concentric ring 6 inside



Have found a
similar structure in Fort Union Frm. at
Smith Mine in Montana

V11314. Populus II (1871) p. 468, Pl. 55 (4)
An indet forked twig!

× V 11316 Populus arctica Hr. II (1871) p. 468, Pl 43 (14)
A small immature lf w acrodromous r actinod nerv
& no dist feat. preserved. Indet.

V 13801 Populus arctica Hr. Unfigured
Lf or good spec. of Cercidiphyllum w/ gl. teeth
having 2° vein ending in a sl. expanded impacted area
weakly converging h.o. lateral veins and rounded
A-I teeth. Lf. ell, shallowly & distantly A-I-toothed
~~Hon~~ Actinod w 5 1°s from base 2°s archingly
perc. arching toward margin & sending a br. to
the teeth. 3°s relatively random sl. orthogonal &
3×4 Ho vein pattern identical to that of C. arctica

~~V 13799~~

V 13802, 13797, 13803 All ident as Populus arctica from Kleinpass Coll. appear to be truly Cercidiphyllum genetrix although these are generally poor & incomplete specimens. All unfig and undescr.

X V 13152 Rhus bella II (1871) p ~~[illegible]~~ pl. 56 fig 4.
Ds fig has apparently trifoliately compd leaf lfts and pinn venid incompletely. More notes in 1977.

V 11332 Corylus macquarrii II (1871) p 467, Pl. 44(11)
Ovate, lf ~~pinn~~ cord bs., pinn vln, lowr 2°s in outer hr. 3°s regdly pinn. H.o. vln a dense reticulum margin not preserved. ∠ of 3° origin basally right.

X V 11333 Quercus stenstrupiana II (1871), p 472, Pl 46(4)
An indet incomplet immature leaf frag.

X V 11328 Q. lyellii II 1871, p. 471, Pl. 46(8)
An ell, pinn venid lf lower margin (all that is preserved) is entire, bs cuneate, 2°s ?, 3°s pinn., h.o. vln Bilobate Suggests looking at Melissma ~~tek~~ dentata as possible.

X V 11335 Q. laharpii II 1871, p 471, Pl. 49(3)
Basal frag of an ell, pinn ven. incompletely lf with pinn 2°s and a fine strongly impressed reticulum of h.o. vns. No great size difference between 2°s & h.o vens. Veins detail really not well enough preserved to be sure but there does not appear to be a fimbrial vein.
Not Quercus

X V 11329 Quercus groenlandica Heer II (1871) p. 471, Pl. 45 (4b)
although label claims this is illust spec it cannot be the one rep. on Pl 45 (4b). It is an apical frag of a pinn crasp lf w/ perc. 3°2.
Spec ident in Pl 53 (5) as Cornus florl is not a Cornus but an indet basal frag. of an apparently actinodromous (palin?) lf poss belonging to Platanus or Hamamelidacial. 3° ven obsolete.
Apical part of leaf on specimen belongs to "Vib." cupanoides complex.

X V 11330 Quercus Olafseni Heer II (1871) p. 471, Pl. 46 (2)
~~A large~~ Basal frag of a large, pinn veined, apps. crasp. lf. with their perc 3°2, h.o. ven. 4°2 can barely be seen in a few areas where app ~~orth~~ orth. in their origins. No trace of a fimbrial vein exists ~~along~~ along margs but this may be due to lack of preservation. Marg with shallow gently rounded teeth, not as illust except bottom sl. 3 teeth. Prob not an oak.

V 11349 Viburnum whymperi Heer II (1871) p 464, Pl 46 (1)
Holotype spec.
An all lf. w/ serrate margin although most of this is eroded away and not as shown in fig. Secs. sl. th. low poss curving outward, bared 2 pr having outer branches br. 1 2°2 running to teeth (probably) doubly, 3°2 sl. thick & oppositely perc. If not a Corylus closest amer. analogue would be with V. ~~Vib.~~ antiguum or Vib. cupanoides. ? Why not just Corylus. ?? Certainly not w/ V. cupanoides!

V-11325. ~~Pos~~ Fruit of Fagus Heer II (1871) p. 470 Pl. 46 (9)
~~Vers~~ Very poorly preserved mould of a fruit could be almost anything even a mould of Carpolithes arctica:

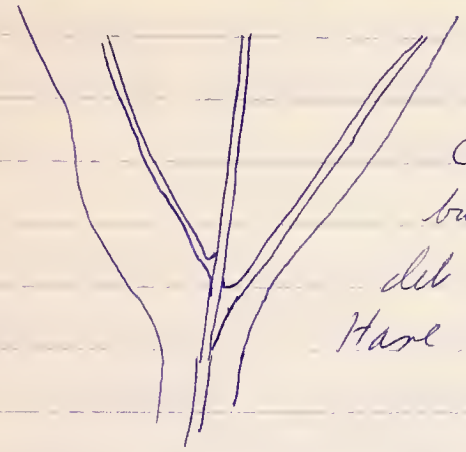
X V-11331 Quercus olafsenii var microdentatus
Heer II (1871) p. 471, pl. 49 (1)
Frag of a large leaf, margin is an artifact of preservation, 2 3°s loosely perc to sub 11 4° in between them thus poss platanoid. Should without ~~Comparison~~ much more comparative material

X V 11326 Castanea ungeri, Heer II (1871) p. 472 Pl. 45 (2)
An amazing specimen which may actually be a fagaceous fruit. Consists of a 4 lobed mass 2 1° lobes in turn divided into 2 2° lobes with an outer coat (pericarp?) to which 5 cm long spines are attached

X V 11327 Cast. ungeri Pl 45 (3)
Serrate lf. w rounded teeth. Ven pinn, Crosp 3°s closely perc. 1°s non obsolete.

X V. 11334 Quercus laharpi Heer II (1871) p. 472 Pl. 44 (10)
Basal portion of a pinnate or transitional imperfect ~~actinod~~ superadually palinactinod lf. base acute then decurrent. Margin with shallow rounded serrations. 2°s fairly str. then barely upturned at margin. Lowest pair of 2°s stronger than those above but having the same course; pinction w/

the 1° vein a small pad-like area.



Thickness of lowest 2°s also anomalously great for being so close to margin. 3°s pass but cannot see b.o. ven. to det if 4°s are nb ∥ or not. Have seen similar bro. in F.V.

V 11338 Planera ungeri Ett. Heer II (1871) p. 472, Pl. 44(6).
Ax frag of lf w/ pinn ven. 2°s very thick opp. crasp, margin not preserved, 3° barely preserved much thinner than 2°s, opp pair. Marginal teeth an artifact of preservation. Prob ≠ diff from Quercus complex (due to great diff in size between 2°s & 3°s) but really indet without much more material. Pros. Ulmaceous Zelkova rather than Planera would be a better bet.

V 52518 Populus zaddachi Heer II (1871) p. 468, Pl. 43(15)
apparently a Cercidiphyllum crenatum. Pl. teeth of proper shape. Other venation is good.

Also Pterospermites spectabilis same site
Crate palinactino prob imperf, suprabasal w/ secondaries crowded below the point of emergence of the lateral 2°s. 3°s loosely and irreg percurr ≠ 4° ven loosely orthogonal, 3°s ⊥ to mr than

organized concentrically further out.

V 11337 Solanera ungeri Heer II (1871) pl. 45 f. 5c
Indet pinnate comp serrate.

V 11 339 Ficus? groenlandica Heer II (1871) p. 472, Pl. 54(2)
Actinodromous leaf w/ perc 2°r, 3°r orthogonal,
h.o. ver. is orthogonal but no stitched intersec
veins present nor is the fine h.o. quadrangular
areolation of Ficus. Indet but not a Ficus

Macclintockia is a dipteridaceous fern!

V 11326 Castanea ungeri Heer II (1871) pl. 45 (2)
Another spectacular pro. Fagaceous fruit.

V 13065 Magnolia inglefieldi Heer II (1871) pl. 51 (2)
An axis bearing imbricate blots w/ no interior ~~or~~
str. or external features remaining. Indet.
Same for V 11360 fig Pl. 51 f. 3.

X V. 11361 M. inglefieldi Heer II (1871) p. 478 Pl. 51 (6)
Not nearly a ~~st~~ clear as figured. Indet.
Pinnate, eucampte, int. magnet 21³ leaf but indet

X V11362 M. inglefieldi Heer II (1871) p 478 Pl 51 (7)
Basal frag of int marg of w/ decurrent base pinnate
eucampte 2°r random h.o ven obsolete frag
indet.

X V11332 Quercus platanoides p. 472, Pl. 46 (5)
Pinnate crate lf. margin crenulate, 2° & crasp., 2° & L
perc. H.O. ven. stimulate.
Leafis a Corylus marginata

X V 11336 Planera ungeri Heer II (1871) p. 476, Pl. 45 (5)
Middle & upper portion of a pinnate lf w crenat-crenat
teeth & pinnate crasp ven. 2° & very thick & &
unbranched & strongly crasp. running to O of both
in style of Higher Hamamelids, 3° & Conv thin to 2° &
perc. h. ven reticule. Hamamelidaceae & Quercus
is good. U small Q. groenlandica but O of teeth to
acute not rounded. Tellkova a gross. Config of
distal 3° veins also good for this genus.

In same rock is spec. called
Hedera macluii which is very poorly preserved
but similar to Viburnum antiquum from G. V. for.
Also a Platanus sp.
X V 11342 Platanus guillelmae Heer II (1871), p. 473, Pl. 48 (1)
Disco Island
Rt Basal & medial portion of a typical small palinactino
Platanus nynoldsii type of leaf.

52515 P. guillelmae Disco Heer II (1871) p 473 Pl 48 (1)
U large lobate palinactino lf w perc. 3° &
in a mud ss. Typical P. nynoldsii.

V 11343 Platanus guillelmae Dasci Hen p 473, Pl 48(2)
a selection of real hybrid P. wrightii small leaves
in med ss.

stopped ~~at~~ after Case 15 Row 3 Drawer 2.

British Museum Second Visit
June 27, 1977.

Will try to see all arctic Tertiary Collections relating to Heer's works or to my works in Amer Jour.

Metasequoia – from Spitzbergen Gordon Coll. 1896 after Heer.
much in very large frag. form. On the average larger than western N.A.
Croft coll. 1934.

cf. Equisetum magnum V 32332 Spitzbergen, Longyear Glac.
Croft Coll.

cf. Osmunda macrophylla Berhallow V 32335 same coll & loc.
V 32336, V 32338 V 32548

Sequoia langsdorfii Disco s/island V 6380
Heer 1868, FFA I, pl. II f. 8
Metasequoia occidentalis
Hemmer Coll.

Ginkgo borealis Disco s/s. V 15876
Heer 1868, FFA I, pl. II fig 1
= Ginkgo adiantoides but is mentioned first on p 183 please clarify this case if need.
Hemmer Coll.

Woodwardia arctica Heer, 1869, Phil Trans. p. 463, Pl. 40, f. 6. Hemmer Coll V 11281
Looks like ~~Osm~~ Onoclea hesperia.

Metasequoia occidentalis
= Taxodium distichum var. miocenum Heer.
V 11290 - ~~Dro~~ Atanekerdluk, Greenland. Fig. Heer
Phil Trans, 1869, p 463, pl 43 (4).
V 11299 Same loc. Fig Heer, 1869 ✓

V11293 - Metasequoia cone - Fig Heer 1869, Phil Trans
Roy Soc Lond. FFA-II pl. ~~46~~ 46 (7b)
Probably.
so called Platanus ungeri leaf beside it pl. 7a
is totally featureless margin does not show the
two lower teeth or anything else except irreg.
termination due to breakage of specimen.

Fl. Foss. Arct. Vol. 2 p 49 fig. 4.
52517 a. Quercus lubayi poorly preserved specimen margin
mostly eroded, 3 or 4 pairs as shown, h.o. veins forming
a strongly impressed quadrangular reticulum; cannot see
any trace of a fimbrial vein indicating Quercus;
Could be almost any such leaf possibly even Ficus

b. Platanus guillelmae poorly preserved platanoid
of the P. neoldsii group.
c. Aralia browniana - ~~indet~~ indeterminable spec.

V 11357 Aralia brownsiana Heer Vol II Pl. 47 (7)
Absolutely featureless, entire margined leaf w/ no venation except 1° preserved as cast film in ss.
Useless.

V 13805 Populus richardsonii Alanelsudlals Gr.
Shropper Coll. unfig.
Dicotylophyllum richardsonii (Heer) Doyle
V 13807 Pop. richardsonii - The same as above
really hard to det tooth pattern or other features.

Heer vol II pl. 44 (11)
V. 11322 ~~Carpinus~~ a. Corylus macquarrii Good leaf
3°a at st 45 to 2°a, h.o. vein quadrangular & deeply impressed. Teeth lobs typical a good ident.
b. Ilex macrocarpa - leaf fragment w/ 2r vein. indet.
c. Carpinus sp. Indet frag.

V 11320 Salix varians Heer Vol II pl. 43 f. 13
Specimen broken since it was figured - Teeth not Salicoid may have something to do with "Viburnum" cupanoides complex.

V 11323 Corylus insignis Heer Vol II pl. 49 (5)
Sharp tooth & angular venuses, looks a bit like "Vib" integrum but prob is Corylus because of first two characters. Also strong sec. straight 2°a running right to apices of teeth. One tooth shows a higher order lateral inscription.

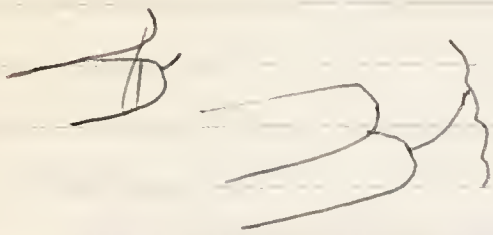
V13801 Cercidy ~~phyll~~ ~~ent~~ as Populus arctica & Sequoia langsdorfii

Classic specimen of Cercid. aff. C. genetrix (Newberry) Hickey, 1977. With excellent h.o and marginal venation. Teeth have sl. termination & venation of Cercidiphyllum & h.o ven. is typical.

Other spec is classic Metasequoia occidentalis.

V1518 Populus richardsonii Klondyke coll (not figured) Large Cercidiphyllum. Cannot really see Jack's distinction between Dicot. richardsonii and D. Cercidiphyllum.

V13152 Rhus bella Hew II Pl 56(4)



Margin shallowly crenate fairly closely so.
2° ven semi-crisp.
This is a member of the ~~H~~ Genus Dubogya

V 13149 Carpolithes follicularis Hew FFA II Fig 52 Pl. 50(15)
Cercidiphyllum fruit.

V. 11389 Carpolithes pusillimus Hew FFA II Pl 56 (12).
Nothing much.

V 11314. Populus Heer FFA II & Pl. 55 (4).
~~The~~ Ax ~~sem spin~~ branched axis w/ no distinguishing features at all.

V. 11386 Carpolithes sulcatus Heer FFA Pl 56 (11)
Seed coat with lines radiating from one pole preserves some cellular pattern & could possibly be det. by cuticle work.

V 11324 Fagus deucalionis Heer FFA 1869 (II) p. 470
not fig. Hilgenper coll.
Viburnum cupanoides Complex.

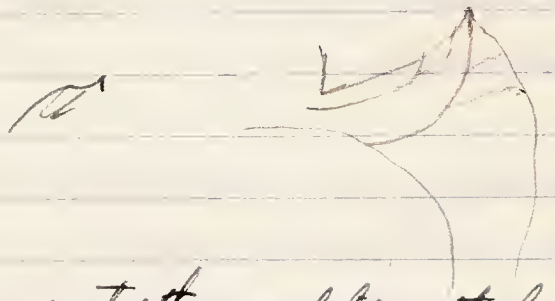
V 13768 Quercus groenlandica Alaneknudlek Greenland
Noted by Heer Phil Trans 1869 (FFA II) p 471
but fig. omitted from plates. Hilgenper coll.
Plant trash.

V 11325 Fruit of Fagus Heer 1869 (FFA II) Pl. 46 (9)
Cannot find it on the rock where it is supposed to be.

V-6706 McClintockia Lyelli Heer 1868 (FFA I) Pl. 15 (1a)
McClintockia nothing like it in USA western Tertiary. Is it an angio or a dipteracous fern?
Populus arctica - more like a small Platanus nyndsii with very sharp teeth.

V 18899 MacClintockia Unfig Seward Coll.
I would check Dipteridaceae for this, as well;
has a very stenotypic vein pattern

52516 Macclintockia dentata Heer FFA II Pl. 52 (4)
No illustr. Gl. apiculate cuneate teeth



Venation of teeth unlike that of any mod. group but w/ Gl. apiculum McClintockia is not a fern.

V11364 McClintockia lyellii Heer FFA II Pl. 52 (2)
No illustr. quadrangular areolation very strongly impressed. Small teeth on upper left hand margin. ~~2°s~~ 1°s meeting at base of leaf.

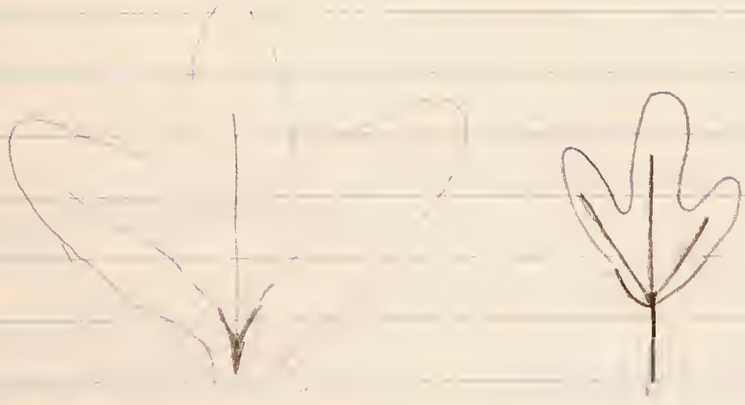
V 11347 Dryandra acutiloba Heer FFA II Pl. 39 (7)
Disco of Seward.
Merely a badly torn up leaf scrap showing separation along 2° veins and no margin

V 11366 MacClintockia dentata Heer FFA II Pl. 52 (8).
Good teeth w/ glandular ending and strong med. 2° vein

V 11365 MacClintockia lyellii Heer FFA II Pl. 52 (3)
2°s meeting at the leaf base in a reinforced area which left a deep depression. A lanceolatus

KG - Alexander Island

P & G South Shetland.



Sur la présence des Proteaceae dans le Crétacé de la Bohême. Zad. Venceslas Nakladem Českosl. Bot. Společnosti Čís 150107 1931/08 11 9 — (Bull. de la Soc. Bot. Tsch. Slov. p. 167, 174)

4/nov. B174.

Protophyllum aralioides Vel et Vein

K. perneb

Otruby u Slaného

Vel. et Vein IV (1131) Ti. 31 f. 4 p. 21

Ministerstvo školství Praha 2 Karmelitská 7

Ministry of Education

Study original material

Private visitor

Send Blanka P. met. P. glabra } pollen.

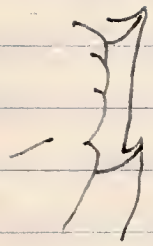
Ingphyllum gichfuni Velet Vin

Verb. 1931 IV p 17 Feb 31

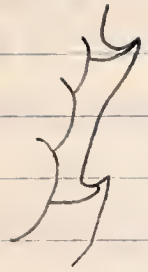
Turned on gamma ray time of 3°.5 at nearly at L.S. To med. 1°. . .

V 11367 MacClintochia dentata Heer FFA(II) Pl. 52 (7)
~~teeth~~ as shown.

V 18898 MacClintochia toome turnerii Seward
Fig. Seward Tiss Jubilaeum Soc. Sci. Belg.
Pl. C fig 25 H gunguel, Disco
Has ~~not~~ what looks like rosid teeth.



V 11363 MacClintochia Tyallii Heer FFA(II) Pl. 52(1)



Fath.

V 13151 Ilex longifolia Heer FFA (II) Pl. 56 (1)
Specimen with fine deeply impressed venation
One tooth well exposed but without indurated gl. setae of
Ilex. Not an Ilex. spec. Ilex without adl.
material.

V 13148 MacClintochia Lorenzii Heer FFA II Pl 5 (12)
Small teeth illustrated on upper ~~left~~ right are
really every in margin.

V 13152 ~~Alnus~~ longifolia Heer FFA (II) Pl. 56 (12)
Much as shown through ven. semi-crasp rather than birch. ~~Hoven.~~ 3° narrow & rarely transverse H.O. ven. present & articulate. Teeth should be examined closely.

V ~~12~~ 11289 Hiddingtonia helvetica Heer FFA (II) Pl. 46
Looks like Glyptostrobus or Sequoia Cone is of Taxodiaceae, Sequoia or Metasequoia
Very nice large Platanus guillemae on obverse. The Liquidambar europaeum Fig. 13 is a fragment of the artist's imagination there is just the barest trace of ~~th~~ venation there. but nothing like what is shown.

V 11360 Magnolia inglefieldii Fruits Heer FFA (II) Pl 51 (3)
Prob. leaf scars on or araucarian cones.

V 13065 Magnolia inglefieldii Fruits Heer FFA (II) Pl 51 (2)
The same as above.

V 26794 Cercidophyllum richardsonii Seward & Edwards, 1941, Ann. Mag. Nat. Hist. (II) vol 8 Pl. 3 (2)
Christian IV Glacier (Coal Cornes) E. Greenland.
Very poor specimen showing no details of ven. but having a margin apparently marked by large ~~sm~~ A-1 teeth & rounded sinuses.

V 26793 Cercidophyllum richardsonii Seward & Edwards Pl III (1) as above.
Very poor fragment showing actinodromous venation of

V 13832 Magnolia inglefieldii Atanikerdluk Greenland
Heer coll. unfig.
Ent. margined, very broad leaf. h.o vein.
Stalk. A poor specimen.

V 26797 Cercidiphyllum (fruit) Coal Corner Greenland
Fig. Seward + Edwards, 1941 Pl. 3(6)
Typical ~~show~~ oval fruit capsule though without striations
preserved on it

V 26796 C. (fruit) same loc. same ref. Pl. 3(5)
shows trace of latitudinal striations

V 26795 C (fruit) Coal Corner, Greenland. Same ref.
Pl. 3(3) another typical fruit
no striations.

52515
~~V 11341~~ Platanus guillelmae Uparasuseuk, Disko Is.
FFA (II) Pl. 47 (½) Heer Coll.
As illustrated near to P. reynoldsii.

V 11341 P. guillelmae Same loc. FFA(II) Pl. 47(2)
As illustr.

V 13767 Daphnogene kanii Atanek. Gr. FFA (I) Pl. 16(1)
Higher order vein strong and roughly quadrangular
but washed out in impression + hard to see. ~~I think~~
this is a large variant of Macclintockia.

V 11343 Platanus guillelmae Ugar. Disko Is. FFA (II)
Pl. 43(2) Heer.

All spec. as figured & belong to this species.

V-11345 Sassafras ferrettianum Atane. Gr.
Heer FFA(II) pl. 50 (1a)
Only preserved lobe of a platanaceous leaf no 3° ven.

V-11346 S. ferrettianum Atane. Gr. Heer. FFA(II) Pl. 50(1b)
Platanaceous ~~leaf~~ base; look a bit like the Ulmaceous a bit but matrix so coarse as to not to preserve the 3° or H.O. ven.

V-11354 Prunus scottii & Vitis arctica Heer FFA II
Pl. 55(~~Pl. 51~~ fig 5c)
sculpturing on depression of mould caused by coalification of the Carb. film inside. under.
Vitis arctica ~~[illegible]~~ Median sulcus not present to show. Figs. 5a & b
Leaf illust. in 5a as P. scottii is incl.

52514 Platanus guillelmae Upernas. Greenland.
Heer FFA II pl 47(3)
As illust.

Stopped at drawer 43A /29

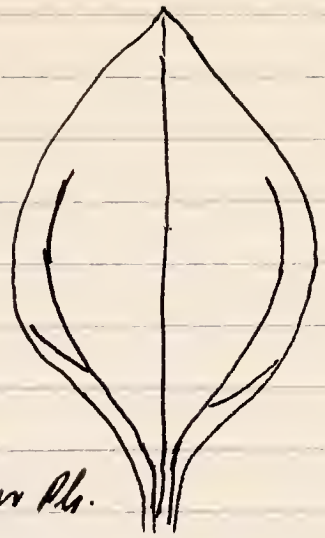
Return Visit
Chris Hill

5/18/92

Phyllites sp.

37 J 25

Palmate lf. w/



No finer veins visible

Great Oolite

Fig. Seward Cat. for Pls.
Brit. Mus. pt. II, 1904, p. 152, pl. XI, f. 5-6

No x veins visible.

Br. Mus.

Phyllites sp.

From the Great Oolite near Stonesfield

Fig. Seward Cat. Jur. Pls. Br. Mus. pl. II

1904, p. 152, Pl. XI, figs. 5-6

in orth. supratarally, acrodromous lf.

lat 1°s forking once to margin.

No details of t. s. str. preserved.

1° vein punction does appear to be all from one lead.

British Antarctic Survey 6/29/27

KG Alexander Island Nature Paper.

P & F South Shetland Islands 50 & 60 my
These only Late Pal. & P-F dolly.

KG 2065.5

Penn crasp ser. leaf 2°s & tips of shoy serations trace of transverse 3° ven. preserved. Leaf pow looks like Nothofagus

KG 2166.2

Large lf. ex. 10 cm. pennate ~~too~~ 2°s straight. With a pair of basal 2°s having strong outer branches. Lf. shape ovate. Serrate. H/ transverse 3°s.

KG 2065.8

Pennately veined leaf, str. 2°s very poor preservation.

KG 2065.4

Strate piece of bark etc. heavy carbonized coating

KG 2165.2

More frags. of ~~no~~ "Nothofagus" leaves some exceeding 7 cm no 3° ven preserved.

KG 2063.3 Base of a "Notho" leaf mid vein and 2°s stand in high relief.

KG 2065.3 Mammal teeth very large 2°s & end of tooth where term. no 3°s ven.

KG 2066-10

Dental inlet scups incl. possibly the semi-crispedo type from South Shetlands. Their semi-crisp 2°s branching before reaching the margin possibly further from margin than those of S. Shetland one.

KG. 2066-7 Frag of pinn. leaf in very coarse sed. No 3°2.

KG 2066.9 Basal part of a poorly preserved lf. w pinn. ven.

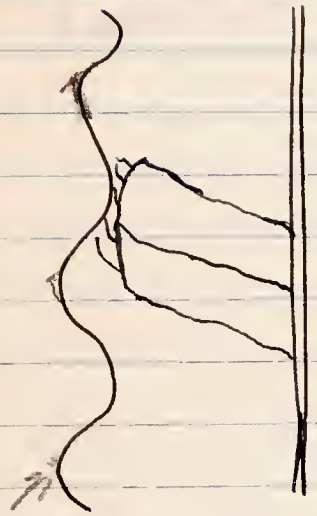
KG 2066.6 Possible monocot fragment surface cell detail visible might be replicated.

KG 2166.4 Fragment of an actinodromously veined leaf w 3 principal veins loose & fairly irreg. 2°s.

South Shetlands

P 1249.7 Frag of a pinnate, leaf w/ rounded serration Crosp. Perc closely spaced 30 ∞. Tetracera or more likely Nothofagus.

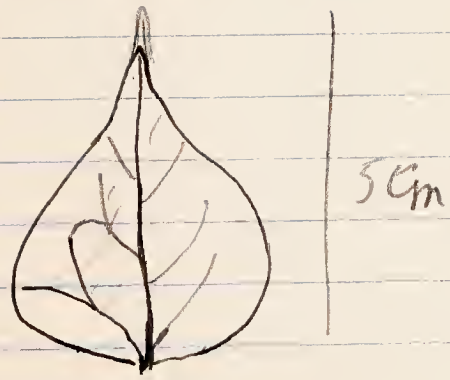
P 935.17 Leaf w a revolute rounded serrate margin Pinnate semi-crosp. vein.



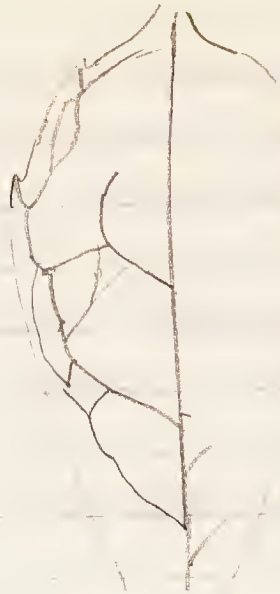
P rotundal? Lomatia?

Some indic of underneath tip on leaf on P 935.13

P 935.13



P 935.12



Proteacae ??

Yorkshir- 9/20/92

Scalbr Ness Rocks 91. N By 0 3.6 W on
9201 W Chris Hill Sheet 101 Ordnance Survey
Geff H. Scarboro.
D. Taylor.

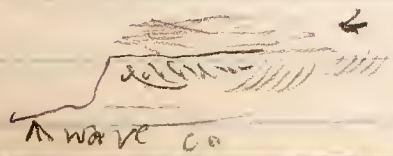
Scalbr Fm. - Bajocian Long Nab Mbr
Scalby Fm. (upper)

Scarborough.

Claughton Fm. { Gristhorpe Mbr ← Plants
Lebberston Mbr.
Sycarham Mbr ← Drift Plants
Blowgill M.
Eller Beck Fm.
Saltwick ← Deltaic Coal Ole
Dogger

See p 42 ~~and~~ 3rd Fig from top for Section Pic-

- At Bridge ½ N. of PK. Lot.
Large Scale Sandy X bedded
BASAL Mbr. of Scalbr
Sigmoidal, Lateral accretion



At Scalby Beck

Scalby - upper.
Carb Shs. + lenses of
muddy SS.

9201 Long Nab Mbr.

Ginkgo huttonii -
Araucarian roots w nodules.

Lateral accretion beds in a grey shale.

Also found. Cyparissidium. David. In

Oleanane
+ Ginkgo cuticle sampled:

→ Oleanane Sample
9201 - From ginkgo bed.
Tight vfg SS to SITST.

→ Oleanane sample
9201 © From slumped but
tight dark grey clays of
Long Nab Mbr. of Scalby Fm.
mudstone.

5/20/92

~~9489~~201 (CONT.

lenses of LAT accretionss interspersed w. med. grey mudst. w. thin layers up to 1 cm of SLTST (lt. grey)

- Tops of channels freq. leached w. vert. roots & liminte below. on joint cracks & bedding planes

Meander Belt sands & flood basin shales.

Wed. 1:30

Thur. 2:10

Low Tide Caton Bay Fri. - 2:50 pm. !

9202 Yons Nab - As Red Cliff or
Calf Allen Rocks.
08.5 W 84.5 N on Scarboro
Ord. Survey Scarboro

Caxton Bay.

Calc grit
Oxford Clay
Hackness
Kellaways
Cornbrash

- Oxfordian
- Calloviar

Lebberston Mbr
Sycarhams Mbr

From Sycarhams Mbr of Claughton Fm.
So called non-marine Fm
Sandwiched between two
marine fms.

- Lebberston Mbr
A calc arenite — Acritarchs
x bedded Flat bedded.
x beds. Tidal

Yons Nab - on 5/20/92

9203 a CAYTON BAY S. Side,

Base of Gristhorp Mbr of Claughton Fm.
Lt. Grey SITY CLAY of Supposed non-marine middle deltaic Fm.
Some ironstone nodules present.
From 1m above top of marine Lebberston

9203 b CAYTONIA beds in middle Gristhorp Mbr.

Taeniopteris
Willsunia
Nilsoniopteris
Sagenopteris
Cladophlebis denticulata.
CAYTONIA fruits
Brachyphyllum
Geinitzia

Took Oleanane bulk & TAXON bulk sample

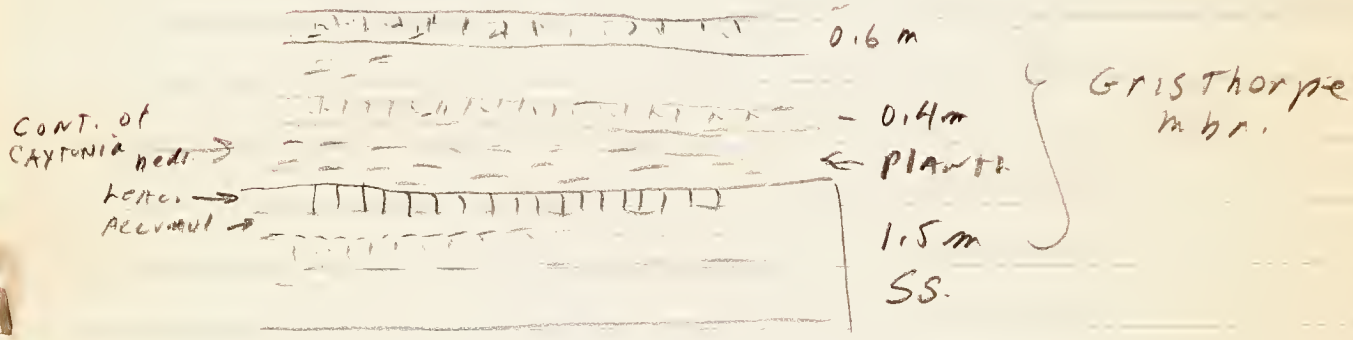
Fine grained, w/ carb laminae
Probably back swamp deposit.

Laterally probably channel SS.
Channels s tops with roots &
leaching to dead white

9203C

ABOUT 300 m S. of MAIN CAYTONIA loc.

Substantial broad flat channels ~~w~~ massive d



SS. Represent: channel sands w/all 1° structure eliminated by rooting & soils Fm.

Thes. Thicker SS. show multiple reactivation events.

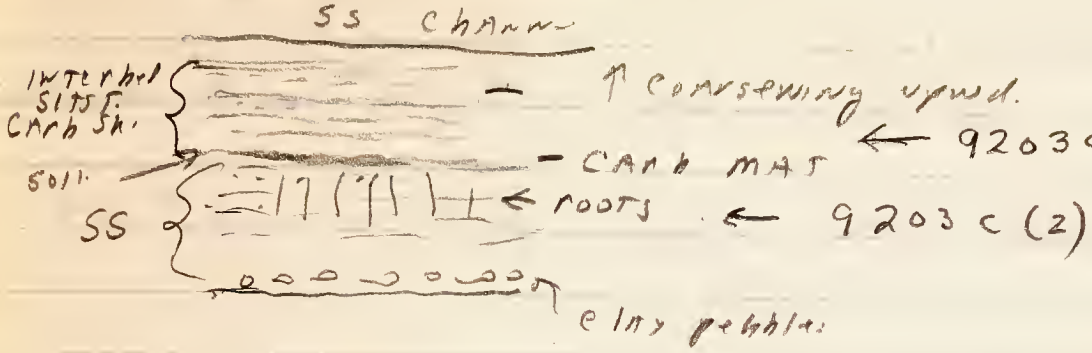
No fm. or member break here only channels & interchannel areas

Distal levee or ~~splay~~ series

5/20/92

9203 c

PX.



Osmundaceae

Geinitzia more abundant

	Kimmeridge Clay	Kimmeridgian
	U. Cal Grit	
	Coral Rag	Oxfordian
	Oxford Clay	
	Hackness Rock	Upper Mid
	Kellaways Rock	Callovian
	Cornbrash	
	Scalby Fm	
	Scarborough Fm	
Ravenscar Gp. (Del Jaic Ser.)	Claughton Fm: Gristthorpe Mbr ← Cayton a bed	
	Yons Nab Fm } = Lebberston Mbr at Yons Nab	
	Millepore bed	Bajocian
	Scarborough Mbr	
	Eller Beck Bed	
	Saltwick Fm.	
		AAl.

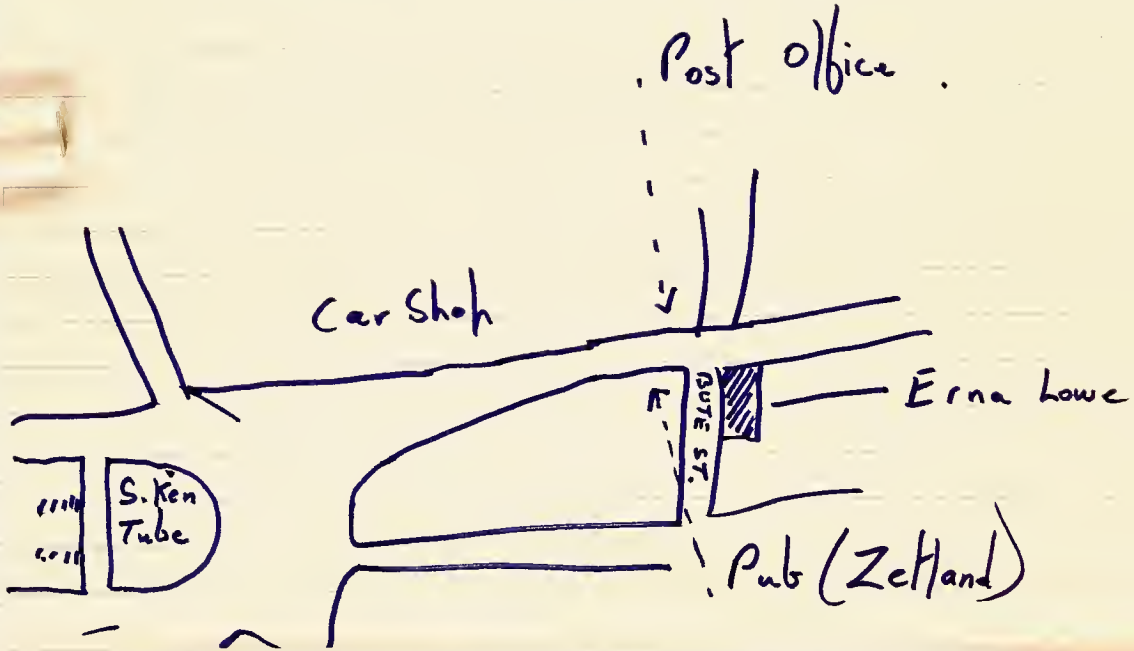
9204

Oxford Clay
in a slump block. 1/4 mi in length

Good tight sample but a SIT. Not
a Clay

Prob

Probably ~~Probably~~ Thinnfeldia / Dicroidium Group


Post office
Car Shop
Erna Lowe
Gate St.
S. Ken Tube
Pub (Zetland)

N.H.M. Form 187.

BRITISH MUSEUM (NATURAL HISTORY)

LONDON, S.W.7, ENGLAND.

SPECIMENS SENT OUT

AGREEMENT.

I ...Ter. J. Hickey..... of ..Smith Inst..... hereby agree to take reasonable care of all specimens that may be entrusted to me by the British Museum (Natural History) while in my charge; to return all of them so as to reach the Museum not later than the date specified on the Invoice accompanying the specimens, unless an extension of time shall have been obtained; and, when dispatching them, to have them carefully packed, to insure them for the value specified, and, if they be sent by post, to register them.*

Signature ...Ter. J. Hickey.....

Address ..Dir. of Paleobot. N.Y.....

Date ..June 21... 1974. .....

* The expense incurred will be refunded on demand.

To be dispatched in duplicate: the one to be completed and returned, and the other to be retained.

D 2082 Wt. 38942/348566 1,000 12/63 KCN Gp. 807 (3344)

Edguardo Request.

Could not find Fagus sedmeandi fig spec in range 20, 2, 5
but some dup material.

no Q. tasmanii n. sp

C. H. SHUTE
DEPT. PALAEONTOLOGY

send papers.

Cirque plucking first valleys of w.
Horn peaks Serrated Ridges
~~Hanging~~. Valley Glaciers
U shaped ~~gl~~ valleys
opp to V shaped.
Hanging Glac x Hanging valleys

Glacial dep.

Moraines Lateral Terminal Kame terraces
Lobed

Cont glacier Terminal Moraine
Outwash plains - coarse outwash till.
Ground moraine w pot holes
Drumlins as more over land.
Dammed up lakes - Finger lakes via w y
w U valleys

Glac Erosion - Polished & grooved rock surfaces
scratches in w.
~~Rock~~ Glacial erosional surface Drumlins
Lakes
Scattered Boulders.

Glacial deposits Erosion that is left unsorted
from the broken material
Grade Glacier

Glacial Script

Glaciers which brought final alt. changes over ~~land~~ the northern 1/3 of the N. Hem. Continents during the Ice age are moving masses of ice. They occur when the rate of snow fall exceeds the rate at which it melts. Compaction of the snow as it is buried results in ice & when ice becomes thick enough it flows under its own wt. As glaciers flow they grind and pluck away at the bed rock ~~over~~ ~~which~~ on which they lie dam up streams ~~and create~~ and create other features of chapter 10 which we shall look at ~~later~~ in the slides during next few minutes.

Today most glaciers ~~are of a type~~ in more accessable areas of world occur in mt ranges with cold climates ~~that~~ are called Montane glaciers ~~Dur~~ During the ~~Glac~~ Glacial Ice Age However great areas of continents were covered by ice sheets up to thousands of miles thick which covered all of other features but other most parts mt ranges. Today Continental ice sheets such as these are found only in Greenland & Arctic Islands, & Antarctica.

They have left behind unmistakable signs of their former presence; signs which can be readily recognized by men who know what to look for and it is some of these that we will attempt to show you in this presentation

Riksmuseet, Stockholm

A terrible museum absolutely 18th C. in its approach and concept. Stacks of whales, moth-eaten taxidermy spec. No dioramas. a few cases set up in life groups. The rx and minerals are about the best exhibit. Kjell Engstrom the director says that it is about to undergo a prog

Mineralogical Museum - Copenhagen May 30, 1974

Mostly a standard cabinet display - Geology + Bio of Greenlands, Landforms, Minerals of Greenland. Typical flat pictorial & hand lettered displays of oil for energy cases alongside. Many very spectacular & delightful things but old fashioned

Aarhaus - Den Gamle By
Visited June 3, 1974

Village of ~~wooden~~ moved houses in a recreation of a late Renaissance Danish Market Town. (see Brochure) Many assembled room fragments. very good but a bit artificial as in natural ~~museum~~ ~~the~~ setting because on the interiors these are ~~mostly~~ room settings.

Moesgård
Archaeological museum housed in former outbuildings of a manor. Home of dept. of archeology of U. of Aarhaus
Very open building - typically ~~a good~~ organization
Some contemporary archeol - Afghanistan & Eskimos
Reconstructed house, photomural of setting

The rest is a period by period racing, Denmark's prehistoric culture. Old stone time, ~~from~~ Bronze time etc.

Audiovisual both enclosed w/ window leading into the Grauballe man w good ~~pt~~ of site and excavations photomurals

A very well done excavation film, of Illerup - Funderup showing large photomurals of site, pt of the logging process, mixed with case displays of objects

~~Objects~~ Good display of Iron age coin making process

Large number of objects shown.
Each period room organized by sites sites well keyed to a large map.

Zoological Museum - Copenhagen.

Brochure included. Appears to be a well integrated approach to exhibiting natural history. i.e. Spatial within Denmark & then in "From Pole to Pole" spatial ~~too~~ in the world.
Graphic technique modern w sills screen several sizes of type - relatively brief labels.

From Pole to Pole.
Greenland ~~very~~ to S Pole.
Dioramas very good w sound of wind
Snow burrow of seals w/ Photo mural for back of diorama
Function of various animal adaptations
Fur - Cold Plate w/ mask of fur on it
Feet adapted for snow.
Color in a large w of fur

Arctic insects on a mural in integrated w

Tundra diorama no pls. ident very good photomural background
Birds in natural setting
One movie on wall w sound.
Integrated dioramas, functional cases & Class Cases w natural background.

Labels light tell what an. is + what it does

Beaver logs show beaver chew trees
Rodent zonation w elevation showing species
diff diff in burrowing & ~~to~~ diff in hemoglobin content.

Very large wf rel. fabry diorama of of wd.
No glass simple barrier at knee height w
Tubs. Phess. ~~Dash back.~~

Tape #2 End

Africa - Animals of canopy in lay shaped lozenge
Monkey + bird class. in ~~lozenge shap~~
le a bit of overdesign
Sounds w name of animal light up.

Decorative wall showing mammalian adaptations
from sea ~~to~~ estuary into river.

On the whole good some things not finished & some just don't work.

To here
Tape 21

The Denmark Ecotope Exhibit - worst after usual
million visitors but very good well integrated
Dioramas used as set pieces but not as the only
thing of hall. Notable high point
The largest ant hill of kind ever seen in a
museum in a 6 X 4 X 4 foot case. A
television camera gives a magnified view of ant activity
which is projected onto a monitor nearby. This
proved a very popular exhibit.
Some good taxonomic panels
Principals of ecology - food chains (w chains)

Panels on animal behavior. The basic part the mouse plays in the food ugenic of several predators - fox etc.

Photomurals in backs of dioramas in one diorama the backgrs is panels made of panels of bl & wh. transparencies of woodland at various depths & painted green & yellow by hand. It was so assisted by technical trick de force that it did not much notice the row deer in the foreground.

A walkway through a swamp does not work w/its mixture of real & artificial plants and nasty stuffed animals (all dusty), running water & some live animals

Communities, reproduction, energy cycles are all in this exhibit.

Off to one side is a library type room where visitors can get questionnaires which are then graded by a volunteer. Not actually graded but rather visitor is counselled when he has diff. Also there are popular books in the field identification of plants, birds, animals, shells, rocks & fossils of Dunnards. Then cases of purely systematic collections Birds, Mounted plants in purely systematic arrangements. Finally a language lab type room where visitors can hear bird & animal sounds on tape & identify them but this was closed due to vandalism.

1 resident designer w a staff of from 12-18 exhibits people & 2 resident scients whose full time job is exhibits & are resp for all ex.

Education handled by Bio majors w at least 1 year college bio, from Zool. dept.

Important Weald References.

Allen, P. 1975. Wealden of the Weald: a new model. Proc. of Geol. Assoc. 86 (4): 389- ~~408~~ ~~44~~ 438.
Dept. of Geol., Univ., Whiteknights, Reading
RG6 2AB

Hughes, N. F. 1975. Plant succession in English Wealden strata. Proc. Geol. Assoc. 86 (4): 439 - 456

Middlemiss, F.A. 1975. Studies in the sedimentation of the Lower Greensand of the Weald, 1875 - 1975: a review and commentary. Proc. Geol. Assoc. 86 (4) 457 - 474.
Dept of Geol., Queen Mary College (Univ. of London)
Mile End Road, London E1 4NS.

Owen, H.G. 1975. The stratigraphy of the Gault and Upper Greensand of the Weald. Proc. Geol. Assoc. 86 (4): 475 - 498.
222 Crescent Drive, Petts Wood
Orpington, Kent.

British Museum
Classical Taxonomic Ground Plan.

Bird Hall - Some good new classification cases early in hall. Family of Birds distribution maps - some ecology specimens mounted on attractive backs. Mostly silly scum but some printed labels allowed.
N side of hall basically taxonomic. First part on bird families attractive and well designed later 2/3 pompey old cases filled w specimens.
S side some basic principles some of this is well done.
Genetic variation - too windy & difficult to follow - Models & real specimens used here
Evolution of flight - insect, mammal & reptile parallels also done.
Migration
Seasonal changes in plumage. Tetsy Beecher Borden Tors.

Br. Bird Hall - Domed Blue ceiling with small flying bird silhouettes hung below it & quite nice.
Cases are taxonomic basically w/ a few dioramas for effect. Arrangement is by environments such as Cliffs & Sea Coasts, Marsh & Fen, Decid Woodland, Conif Woodland, Tundra, Farm fields, Mountains, Moors etc.
A good idea for D.C. Birds
Phones for listening to bird calls but rather low fi.

British Insects
Straight Taxonomy

Insect Hall Very Attractive modern.
Frieze of Bl. & White backlighted & incised
bric drawings.
A description of exactly what the hall does
found at the entrance
First 12 Cases Taxonomy - (Printed label squares
no sch scheme or that)
Specimens drawings text fairly good.
Then cases giving structure function - mode of life of
insects & their rel. to man in center
Sh. Function - Migration, galls, flight

Center insect pests, diseases caused or transmitted
Crop insects
Social
The Class of insects Cs. 5-16
Social insects 17-18-19
Lives of insects flight mig etc. 20-31
Insects & Man 32 34 in center
A & Topic index & map of cases outside hall.
Memorizing Life Cycles (Case 6) etc

Corals & Sponges 18th Century Tax some life history
& explanation but then very texts & lots of drawings
Very Ad. Specs. are rare & unusual
forms all in glass cases.
Includes 1 ex on Coral reef by Ch. Darwin.

Reptiles

Taxonomic ~~10th~~ 19th C

One good exhibit on Tuatara

Hist - Tox. occurrences & features.

Whales

Taxonomic models of most whales

Dissections some aspects of migration & evolution

but fairly ~~tight~~ poor blackboard & store.

~~Coral~~

Polypes, Echinoderms, Mollusca.

Taxonomic ~~Std~~ Cases still have drawers of specimens

locked beneath store

A few ~~pre~~ attempts at life histories etc are

included

Well lighted as are all of the galleries by skylights

Imp & Gallery closed.

Fish - 19th Cent Tax things in cases

Some topics of gen. interest covered.

Arachnid Hall

Well done integrated though perhaps too

wordy esp re. Arachnids and scorpions spiders &

Class & Fossil history, How spiders spin

orb web courtship in Scorpions etc

Central Hall

Fascinating open architectural space
Center is a good ~~tion~~ ed on 'pachyderms' w
Eleph, Rhinos, Hippos
Showing in a central hint features of their
life habits + restriction in ranges due to man.
Very good ex.

West side all evolutionary round Man ext & Man
Dev of Home Sap Cult evol., Evol of a
stone age culture in Britain
East side Examples of Evolution - Adaptation, Polymorphism
Geog. Variation, Continuity of life integrated
from animal + plant.
However windy, very busy cases, scanning frig.
on the proper species and not ~~so~~ tightly integrated
~~enes~~ enough to allow ~~for~~ the main point (evolution)
to emerge clearly

Childrens Center

Room w specimens to touch + to draw
Guidebooks + a small library
Modelling clay + Exhibits of Childrens drawings
Paintings & Collages they made.
Birds nesting very unusual.
Can take drawing board + pencils out into museum
Paying 1 penny deposit.

Inverts Cy
Finest picture
~~Th~~ New Accessions
Giant Pandas

Fossil Halls.
Systematic colls of Br. Index Fossils are by period.
Modern mass of fossils. Key to Sundbrots & Pale. Foss.

Ex. on Hom. Smith & stratigraphy.
(NO one looking at.
Origin of Verts + Classification. Starts Vertebrate Hall.

Fossil Plant Cy.
~~Systematic ex. largely~~
~~Origin of~~ Plant Preservation
Earliest Life
Coal Meas Pls - Pit wood.
Indian Clay flora - Amber - Algae
Photo murals of micrographs of calc algae etc.
Time scale of ~~the~~ Plants.
Modern Cases for an old approach to a hall.

Inverts.
Strictly systematic arrangement except for
Use of microfossils (for Correlation in oil drilling)
Many magnificent specimens

Fossil Reptiles Hall I

Spectacular collection of Ichthyosaurus Plesiosaurus
Etc. Also Archaeopteryx Casts.
~~Taxonomic~~ Really just large spectacular specimens
grouped ~~by and~~ loosely by taxonomic parts.

Fossil Reptiles Hall II

Good coll. of large dinosaurs w little integration
spectacular specimens - skin of Bony plated dino
Footprints. Gaudy murals adding little
to mom. do show reconstruction of morph.

Fossil Fish 19th c. Center of hall classification & relationships
Paleozoic fishes - Certain great beauties.
No real integration. Tons of spectacular specimens

End of Mammals

Origin of Mammal Class.
Other Mammal of various periods
Phylogenetic Tree
Ending w Pleistocene
Sea levels isolation, Island faunas
English Pleistocene, Extinctions
Skeleton of Deinotherium large marsupial
Ice weather pattern of H floresiensis on Med. Islands
Olduvai Story well done.
Hall is modern in technique with reconstructions
mixed w cases of more didactic material

However again although silk screen has been used many printed label squares and
Dates on letters have also been used
making many cases a jumbled of colors
squares, photos & specimens.
Labels are long & detailed
Amt of material is also very v (No of
specimens very high.

1ST Floor
Mammals - Mammals separate in cases.

European Mammal Hall Mod modern design but
essentially 1 dep same Hall.

African Mammal Hall
Bordered by a long narrow corridor w
Off Ann P.f along it. A 4 fairly pure dioramas
on life groups

Functional Morphology
a crash textbook approach to form, organ
systems ~~[illegible]~~. Many wonderful cases formed
w/ text,

Mineralogy - Classical System. Ann. Intro Khalis min, XL & Ab. Strs.

Meteorites - mod w. Defining histories falls
incl. also Impact Spec. large met.
Classification, Dating - Tektites. Model of
Met Craters in Arizona

2nd floor Plants.
Giant Sequoia X section at top of steps.
Herbarium sheets w distribution maps beneath
a photomural of the environment from which they
come No not right murals nearly for atmosphere
Herb sheets are a synoptic arrangement of
Britain's flora. Not very successful
Herb sheets in both the cases.
A real course in Botany Classification, Plant animal
Relationships, Pl & Veg. Zonation, several
natural environments, Plant Physiology & growth
(auxin etc), Reproduction, Pollen sampling,
natural environments. Conservation, Ecology.
~~Two~~ Cases Crammed w/ text. w unpaintedly
a hell so quiet that someone had peed on the
floor in finding one of the cases
The few people who come in while I was there
stayed no more than 5 minutes looked at
nothing in any detail

C

Drawers of interest ~~132A~~ 133 Betula
134 Juglans bilinica Acer platan. not ink
136 Alnus rostratum must see

Transfers chs. still have. 06/11/74

HD 20633 590 - 4
595 - 9
600 - 4